

House Consumer Protection, Technology and Utilities Committee

07/20/2026, 11:00 a.m., Philadelphia City Hall, City Council Chambers, 1400 JFK Boulevard, Philadelphia
By Zoe Buchmann, Pennsylvania Legislative Services.

The committee held a public hearing on House Bill 2085.

HB 2085, Prime Sponsor: Rep. Ismail Smith-Wade-El (D-Lancaster) – (PN 2681) Amends Title 27 (Environmental Resources), providing for Legionnaires' disease risk management; establishing the Legionnaires' Disease Awareness Fund; and imposing duties on the Department of Environmental Protection and the Department of Health. Adds definitions. Outlines the duties of public water systems, establishing minimum detectable disinfectant residuals. Directs the department to develop best management practices, outlining content requirements. Requires a public water system, subject to subsection (a), to provide a distribution system maintenance plan. Requires records of disruption and a data management system. Requires the adoption of environmental rules and regulations and outlines the content requirements. Requires the Department of Health or a local health officer to conduct an epidemiological investigation for each reported diagnosed case of Legionnaires' disease. Directs the Department of Health to develop procedures and guidelines regarding suspected outbreaks, outlining content requirements. Allows for the delegation of responsibilities and requires the development of a dashboard. Outlines the duties of building owners and operators, including requiring a water management program, and establishes fines. Establishes the Legionnaires' disease Awareness Fund as a separate fund in the State Treasury for all money collected for violations. Requires water sampling and testing consistent with rules, regulations and best practices developed by the Department of Health and the American Society of Heating, Refrigeration and Air Conditioning Engineers Standard 188-2021. Establishes a Public awareness campaign and annual reporting requirements. Requires the Department of Health to adopt rules and regulations to implement the provisions of the chapter within 24 months after the effective date. Effective in 60 days.

Dr. Charles Haas, professor, environmental engineering, Drexel University, specified, "I'm speaking solely on my behalf and not on behalf of any organization that I happen to be a member of." He noted his 45 years of research on microbial risks and control, including service on two National Academies panels focused on Legionella and drinking water systems. He stated that Legionnaires' disease cases are increasing and emphasized that preventing the disease is a shared responsibility between public water utilities and property owners. He explained that under federal law, a water utility's responsibility ends at the property line, while building owners are responsible for the condition of plumbing systems within their properties. He said stagnant, warm water in building plumbing, water heaters, air conditioning systems and other fixtures creates conditions that allow Legionella bacteria to multiply before becoming airborne through water aerosols. He compared this responsibility to the electric grid, where utilities provide electricity to a property but are not responsible for unsafe wiring or malfunctioning equipment inside a building. He cited a recent study of approximately 5,000 federal buildings that found no relationship between disinfectant residual levels entering a building and the presence of Legionella inside the building, arguing that conditions within the building are the dominant factor in bacterial growth. He expressed support for portions of House Bill 2085 requiring high-risk facilities to develop water management plans, recommending that lawmakers place greater emphasis on building-level water management, establish science-based numerical action levels for Legionella and remove provisions that would increase chlorine levels throughout public water systems.

Dr. Hung Chueng, medical and environmental health scientist, Cogency, introduced himself as a faculty member at the University of Pennsylvania Perelman School of Medicine and the Johns Hopkins Bloomberg School of Public Health, a former Maryland state medical director and the owner of Cogency Medical, which investigates waterborne and environmental disease outbreaks. He noted his service on the board of the Alliance to Prevent Legionnaires' Disease. He stated that Legionnaires' disease remains the leading cause of waterborne illness-related deaths in the United States. He remarked that reported cases have increased

more than fivefold since 2000 despite decades of research following the disease's discovery in Philadelphia. He described House Bill 2085 as a comprehensive approach to preventing Legionnaires' disease. He outlined several components he believes are necessary for prevention, including maintaining adequate disinfectant levels throughout water distribution systems, providing advance notification of planned and unplanned water disruptions that may disturb biofilms, requiring comprehensive water management plans for larger or higher-risk buildings and improving public education and healthcare provider awareness to support earlier detection. He acknowledged that homes and smaller residential properties would not be subject to water management plan requirements, making consistent water quality throughout the distribution system especially important. He stated that factors including biofilms, water temperature, stagnation and disinfectant levels contribute to *Legionella* growth and argued that House Bill 2085 addresses many of these risks. He noted that most Legionnaires' disease cases are sporadic rather than outbreak-related and cited research suggesting that upstream management of water quality is an effective prevention strategy. He referenced John Snow's response to the historic cholera outbreak, arguing that preventing contamination within the water system is more effective than addressing exposures individually after contamination occurs.

Kristina Zwolenik, waterborne epidemiology research associate, Department of Health (DOH), described DOH's surveillance and investigation of *Legionella* infections. She reported that Pennsylvania recorded 1,231 confirmed or probable cases between 2021 and 2023, averaging approximately 410 cases annually. She noted that Pennsylvania's infection rate remains nearly twice the national average reported by the Centers for Disease Control and Prevention and is similar to other Mid-Atlantic states. She added that provisional data recorded 337 cases in 2024 and 450 cases in 2025. She explained that DOH investigations examine an individual's activities during the 14-day incubation period, including workplaces, travel, recreational activities, exposure to hot tubs, decorative fountains, misting systems, respiratory equipment, healthcare facilities and residential water sources. She continued that when multiple cases are linked to a common location, DOH works with environmental consultants to develop sampling plans and coordinates with the Department of Environmental Protection (DEP) and public water suppliers when public water systems may be involved. Regarding House Bill 2085, Zwolenik stated that DOH shares the committee's goal of reducing *Legionella* infections but said investigative findings consistently show that outbreaks most often result from poor maintenance within individual buildings rather than failures in public water distribution systems. She identified poorly maintained hot tubs, cooling towers, ice machines and plumbing affected by building renovations or prolonged water stagnation as common sources of infection. She noted that the additional responsibilities proposed under the legislation would exceed DOH's current staffing capacity and would require additional personnel.

Dr. Jennifer Clancy, executive director, Environmental Science, Policy and Research Institute (ESPRI), testified that she has studied *Legionella* and Legionnaires' disease for more than 46 years, including research involving disease pathology, outbreak investigations, laboratory testing methods, water management planning, standards development and basic scientific research. She noted that she served as principal investigator for a national study examining the occurrence of *Legionella pneumophila* in drinking water systems. She stated that she has previously testified before Pennsylvania legislative committees on the issue and argued that regulating municipal drinking water alone will not significantly reduce Legionnaires' disease because the greatest risk occurs after water enters individual buildings. She said the weakest point in the system is building plumbing, where conditions allow *Legionella* to grow before reaching the point of use. Drawing on her consulting experience across the United States and Canada, she stated that building water management plans represent the most effective strategy for reducing disease. She noted that numerous organizations, including the Centers for Disease Control and Prevention (CDC), World Health Organization (WHO), Centers for Medicare and Medicaid Services (CMS), Environmental Protection Agency (EPA), Occupational Safety and Health Administration (OSHA), European Union (EU) and Plumbing Manufacturers International (PMI), recommend or require building water management plans. She noted that CMS has required federally funded healthcare facilities to maintain such plans since 2017. She argued that additional regulation of municipal drinking water would not substantially reduce Legionnaires'

disease and encouraged continued collaboration between water utilities and building owners to improve water quality management.

Rep. Lisa Borowski (D-Delaware) noted that Legionnaires' disease can occur in multiple locations, referencing a reported cluster under investigation in New York. She asked whether Legionella is most commonly found in large institutional facilities such as hospitals and nursing homes or whether it is also found in residential homes. Clancy responded that residential homes have not been extensively studied, although some research has been conducted. She said Legionella can potentially occur anywhere conditions allow the bacteria to attach to plumbing systems, grow and be transmitted to susceptible individuals, including residential settings. Rep. Borowski asked how DOH coordinates with local health departments when investigating suspected Legionella cases, noting that Delaware County recently established its own health department. Zwolenik explained that local health departments generally take the lead on investigations if they are comfortable doing so. She said DOH provides assistance when additional resources are needed, such as during outbreak investigations, and shares information about cases or exposures that fall within a local health department's jurisdiction. Chueng added that Legionnaires' disease is a reportable condition, meaning cases are automatically reported to health departments for review. He explained that while outbreaks receive formal investigations, most cases are sporadic and therefore are not investigated as outbreaks. He noted that investigators consider a variety of potential exposure sources, including homes, hot tubs, dental equipment and other water systems when outbreaks occur.

Rep. Joe Hogan (R-Bucks) asked whether Legionnaires' disease outbreaks are typically associated with a single facility or whether they can involve multiple buildings, residential homes or other locations. Haas responded that outbreaks can vary in scope. He said the reported New York City outbreak appeared to involve multiple cooling towers associated with nearby buildings, while other outbreaks may be limited to a single facility. Zwolenik added that most outbreak investigations in Pennsylvania involve a single facility. Chueng cautioned against assuming a single source, explaining that each investigation must evaluate all potential exposure pathways. He said outbreaks may involve a single facility or extend across multiple locations depending on the circumstances and investigation findings. Rep. Hogan asked what role aging water infrastructure plays in the growth and spread of Legionella, noting examples of aging water systems in New York City, California and Philadelphia. Haas acknowledged that aging infrastructure presents challenges for water systems but said those issues generally relate to contaminants other than Legionella. He stated that Legionella typically proliferates within end-user plumbing systems rather than entering through deteriorating municipal water infrastructure. Chueng responded that aging infrastructure can create favorable conditions for Legionella because corrosion, biofilms, stagnation and disruptions to water flow provide habitats where the bacteria can grow. He said disturbances to these systems may dislodge bacteria and increase exposure risks. Rep. Hogan asked whether Chueng was referring specifically to municipal water distribution systems or building systems such as aging HVAC equipment. Chueng replied that both distribution systems and building water systems can contribute. He explained that seasonal shutdowns, hurricane-related interruptions and stagnant water throughout water systems can increase risks when systems are restarted. He added that advance alerts and warnings during such events may help reduce disease transmission.

Rep. Borowski asked about the severity of Legionnaires' disease, including whether it remains as dangerous as commonly perceived and whether certain populations face greater risk. Chueng responded that Legionnaires' disease remains a serious illness with an average mortality rate of approximately 10%. He said individuals who are immunocompromised, have lung disease, are smokers or are age 50 or older face greater risk of severe illness. He explained that only a small percentage of exposed individuals become infected, making investigations more difficult and emphasized that prevention remains the primary public health objective.

Rep. Smith-Wade-El, prime sponsor of House Bill 2085, asked Zwolenik to confirm that Pennsylvania recorded 1,231 confirmed or probable Legionella cases between 2021 and 2023, which Zwolenik confirmed. Rep. Smith-Wade-El asked Zwolenik to specify her earlier statement that Pennsylvania's

infection rate is approximately double the national average reported by the CDC and asked why Pennsylvania experiences a higher rate than the national average. Zwolenik said there is no definitive explanation because the issue has not been fully studied in Pennsylvania. She suggested several possible contributing factors, including aging infrastructure, increasingly complex plumbing systems, an aging population, changing weather patterns and improved disease surveillance. She noted that DOH annually issues health alerts encouraging physicians to recognize and report Legionnaires' disease, which may contribute to increased case identification. Rep. Smith Wade-El asked whether increased physician awareness and reporting could account for at least part of Pennsylvania's higher reported case rate. Zwolenik responded that increased awareness and reporting could be one contributing factor.

Charlotte Katzemyoer, CEO, Capital Region Water, testified that Capital Region Water supports the public health goal of preventing Legionnaires' disease but argued that House Bill 2085 incorrectly assigns responsibility to public water systems for risks that primarily develop within building plumbing systems. She explained that Legionella grows in warm, stagnant water and biofilm found in building plumbing, hot water systems, cooling towers, humidifiers, decorative fountains and other water-using equipment, all of which are controlled by building owners rather than water utilities. She cited the recent New York City outbreak, where health officials targeted contaminated cooling towers instead of the municipal water system, as the appropriate model for prevention. She opposed provisions requiring fixed disinfectant residuals and additional mandates on water utilities, arguing that disinfectant levels should remain a scientific and regulatory decision because increasing chlorine can create harmful disinfection byproducts and operational challenges. She urged lawmakers to instead focus on building-level water management programs, support recognized standards such as the American National Standards Institute (ANSI) American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) 188, improve coordination among agencies and utilities and oppose House Bill 2085 unless it is revised to align responsibility with the entities that control Legionella risks.

Bill Murray, executive director, Reading Water Authority, testified that most Legionnaires' disease outbreaks originate in building water systems or cooling towers rather than failures of municipal water utilities. He asserted that any legislation should reflect that reality. He stated that utilities are already subject to regulatory oversight if they fail to meet drinking water standards that contribute to an outbreak. He described Legionnaires' disease as a shared public health threat that requires leadership, accountability and continuous improvement rather than complacency. While acknowledging that the bill could be refined, he argued that House Bill 2085 establishes an important framework for ensuring accountability where preventable failures occur. He maintained that responsibility, authority and accountability must work together to maintain public trust. He urged lawmakers and water professionals to continue improving the legislation while supporting its overall goals of protecting public health.

Dr. Chris Crockett, chief environmental, safety and sustainability officer, Essential Utilities, stated that Essential Utilities supports House Bill 2085's emphasis on building water management but opposes the bill as written because its requirements for public water suppliers are scientifically unsupported, potentially conflict with existing Pennsylvania drinking water regulations and are unlikely to meaningfully reduce Legionnaires' disease. He argued that Legionella is most effectively controlled through premise plumbing, cooling towers, healthcare facilities and other building water systems. He cited multiple scientific studies concluding that increasing disinfectant residuals beyond current regulatory standards does not provide additional protection against Legionella while increasing the risk of harmful disinfection byproducts. He used the analogy that "one Tylenol is fine, but 10 Tylenols" are not to emphasize the need to balance microbial control with long-term health risks. He recommended amending the bill by retaining provisions addressing building water management while removing or substantially revising the mandates imposed on public water systems, allowing any new drinking water requirements to be developed through the existing regulatory process by DEP and DOH.

Benjamin Jewell, commissioner, Philadelphia Water Department, noted that while the Philadelphia Water Department recognizes the serious health risks posed by Legionnaires' disease, it opposes the provisions of House Bill 2085 that place additional obligations on public water systems. He explained that the department serves approximately 1.6 million residents with drinking water and maintains disinfectant residuals throughout its system to comply with existing regulations. He argued that shifting responsibility from building owners to water utilities would impose high costs, establish poor regulatory precedent, create operational and safety concerns, increase the risk of harmful disinfection byproducts and fail to meaningfully reduce Legionella growth within premise plumbing. He expressed support for strengthening building-level water management plans and training but urged the committee not to advance the bill with the proposed requirements for public water suppliers.

Steve Chintaman, vice president, Government Affairs, Pennsylvania Apartment Association (PAA), testified that the PAA supports the bill's goal of preventing Legionnaires' disease but believes targeted amendments are needed to make implementation practical and risk-based. He argued that the bill applies a one-size-fits-all approach by requiring all buildings covered under ASHRAE Standard 188 to comply regardless of their actual Legionella risk. He noted that risk varies based on factors such as building age, plumbing design, occupancy, water temperatures and the presence of cooling towers or healthcare services. He expressed concern that the bill would impose significant compliance costs on property owners through mandatory water management plans, testing, documentation, inspections and reporting requirements, particularly affecting affordable and workforce housing providers. He warned that mandatory testing could increase legal liability because Legionella naturally occurs in many water systems and positive test results do not necessarily indicate negligence. He recommended several amendments, including creating a legal safe harbor for owners that maintain ASHRAE-compliant water management plans, limiting mandatory requirements to higher-risk facilities, allowing time to correct deficiencies before penalties are imposed, requiring DEP and DOH to provide guidance and model plans before enforcement, establishing uniform statewide testing standards, clarifying that Legionella detection alone does not establish negligence and providing grants or tax incentives to help housing providers comply with the legislation.

Rep. Pat Gallagher (D-Philadelphia) asked how increasing Pennsylvania's required chlorine residual from 0.2 ppm to 0.5 ppm would create problems and whether existing infrastructure, including booster stations, could accommodate such a modest increase. Crockett explained that the proposal affects both free chlorine and monochloramine systems. He stated that maintaining higher residuals throughout an entire distribution system would require constructing additional chlorine booster stations costing tens of millions of dollars, purchasing significantly more chlorine and increasing customer water bills. He added that scientific studies show 0.2 mg/L monochloramine is already effective at controlling Legionella, making the proposed increase unnecessary.

Rep. Hogan asked whether the proposed increase in chlorine levels would make tap water comparable to drinking pool water. Katzemyoer responded that while taste and odor are subjective, customers already notice when chlorine levels are increased. She said the proposed increase would likely be noticeable to consumers. Rep. Hogan asked what effect higher chlorine levels would have on aging water infrastructure, including systems with lead pipes and whether it could increase lead exposure. Jewell explained that balancing water chemistry is a complex process managed by water quality professionals and said corrosion itself is not the primary concern because utilities can adjust treatment to manage it. Instead, he emphasized that the greater issue is the substantial investment required to comply with the proposal despite research indicating higher chlorine residuals would not meaningfully reduce Legionella risk. He estimated Philadelphia would need at least three additional booster stations, costing tens of millions of dollars, along with additional scientists, chemists and operators to manage the facilities. Rep. Hogan followed up by asking whether those additional costs would ultimately be passed on to customers. Jewell confirmed that Philadelphia operates as a fee-for-service utility, meaning any increased costs would require rate increases approved by the Water, Sewer and Stormwater Rate Board. Rep. Hogan asked whether customers' water bills would increase because of the additional chlorine requirements and infrastructure

upgrades. Jewell confirmed that water rates would increase. Rep. Hogan responded that everyone shares the goal of protecting public health but argued that Pennsylvania should also address its lack of statewide plumbing licensure, suggesting that poor plumbing practices contribute to water quality issues and deserve legislative attention.

Rep. Borowski asked how apartment owners ensure building plumbing systems avoid water stagnation and what repairs or mitigation efforts might involve if problems are identified. Chintaman acknowledged that he did not have that information available but committed to consulting the association's members and property management companies and providing the committee with a response. Rep. Borowski inquired how water utilities coordinate with hospitals, nursing homes and other healthcare facilities regarding incoming water quality and whether utilities communicate when they identify potential concerns. Crockett explained that utilities maintain routine communication with designated contacts at healthcare facilities, particularly hospitals and dialysis centers, and notify them whenever disruptions or water quality issues arise. He added that utilities would similarly notify homeowners if they identified a concern affecting their water service. Murray said that Reading serves approximately 110,000 customers across multiple systems but lacks both a county and city health department. He explained that water utilities have no authority over building plumbing design, even when developers install systems that utilities believe will create water quality problems. He cited rooftop water storage tanks as an example, noting that developers sometimes install them to reduce costs despite utilities warning that prolonged water stagnation decreases water quality. Rep. Borowski asked whether House Bill 2085 would help address those building plumbing issues or whether stricter standards and greater local oversight are needed. Murray responded that, in his view, the legislation "misses it completely," arguing that it fails to address the building-level plumbing issues that are the primary source of Legionella risk.

Bill McQuade, immediate past president of ASHRAE, board member, Alliance to Prevent Legionnaires' Disease and global vice president and head of government affairs and sustainability at Baltimore Aircoil Company, testified in support of House Bill 2085, arguing that Legionnaires' disease is a preventable public health threat and that Pennsylvania should adopt a comprehensive, science-based prevention strategy. He noted that nearly 50 years after the 1976 Legionnaires' disease outbreak in Philadelphia, scientific understanding of the disease has advanced significantly, but continued cases demonstrate the need for stronger prevention efforts rather than relying primarily on responses after outbreaks occur. He explained that Legionnaires' disease is caused by inhaling aerosolized water droplets containing Legionella bacteria rather than through person-to-person transmission or ordinary consumption of drinking water. He stated that older adults, smokers, individuals with chronic lung disease and immunocompromised individuals face the greatest risk, with approximately one in ten diagnosed cases resulting in death. He emphasized that most cases occur sporadically rather than as part of major outbreaks, making preventive measures particularly important. He cited CDC data indicating that among drinking water-associated outbreaks reported between 2015 and 2020, approximately 80% were linked to public water systems, with Legionella accounting for nearly all hospitalizations and deaths associated with those outbreaks. He argued that policymakers should apply the precautionary principle by taking preventive action when serious and avoidable risks exist, rather than waiting for additional illnesses before acting. He advocated for a comprehensive "source-to-tap" approach to Legionella prevention, explaining that risk must be managed throughout the entire water pathway, including municipal water systems, distribution infrastructure, building plumbing and the fixtures where people are ultimately exposed. McQuade stated that Legionella prevention should extend beyond cooling towers to include any building water system capable of generating aerosols, including showers, faucets, decorative fountains, humidifiers, hot tubs and other water-using equipment. He explained that low disinfectant residuals, biofilm formation, water main disruptions, pressure changes, treatment modifications, water stagnation, warm temperatures, dead legs in plumbing and inadequate maintenance can all contribute to Legionella growth.

McQuade highlighted ASHRAE Standard 188 as the nationally recognized framework for building water management programs, along with ASHRAE Guideline 12 and ASHRAE Standard 514, stating that these consensus-based standards provide proven guidance that Pennsylvania could incorporate into its

regulatory framework. He argued that House Bill 2085 appropriately recognizes shared responsibility among public water utilities, building owners and public health agencies. According to McQuade, utilities should maintain disinfectant residuals, manage distribution systems to reduce Legionella risks and communicate system disruptions, while building owners should implement water management plans and public health agencies should strengthen surveillance, investigations, education and coordination. He referenced previous Legionella outbreaks in Flint, Michigan, the Illinois Veterans Home in Quincy, Trenton Water Works and Grand Rapids, Minnesota, arguing that changes in source water treatment, corrosion control, disinfectant residuals, pressure and distribution system conditions have demonstrated the need for stronger preventive measures. McQuade maintained that concerns regarding implementation costs, operational feasibility, coordination and unintended consequences should guide careful implementation rather than delay legislative action. Addressing previous testimony regarding higher chlorine levels, he argued that many Pennsylvania water systems already conduct periodic “chlorine burns” to address biofilm and nitrification, demonstrating that increased chlorine residuals are operationally feasible under certain circumstances. He contended that public notification requirements would strengthen public trust by providing timely and understandable information about potential risks and appropriate precautions. He outlined several principles for implementing House Bill 2085, including maintaining a comprehensive source-to-tap approach, applying the precautionary principle, building upon established technical standards such as ASHRAE Standard 188, ASHRAE Guideline 12 and CDC guidance, providing clear public notifications and supporting implementation through education and training. He argued that Pennsylvania has an opportunity to become a national leader in Legionnaires’ disease prevention and urged the committee to advance House Bill 2085 while continuing to collaborate with utilities, engineers, public health experts and building owners to refine the legislation.

Steve Hvozdoch, Pennsylvania campaigns director, Clean Water Action, spoke in support of House Bill 2085, arguing that stronger state action is necessary to address increasing Legionnaires’ disease risks. He explained that Legionella bacteria naturally occur in freshwater environments and proliferate most readily in warm water temperatures between approximately 77 and 113 degrees Fahrenheit. He argued that climate change is increasing the frequency, duration and intensity of warm-water conditions that promote Legionella growth. He cited Penn State research showing that aquatic heat waves are increasing more rapidly than atmospheric heat waves and referenced the June 2025 heat wave, during which the Schuylkill River reached approximately 85 degrees Fahrenheit. He noted that more than eight million Pennsylvanians receive drinking water from public water systems that rely at least in part on surface water sources, making effective water system management increasingly important. He identified several factors that contribute to Legionella growth within water systems, including water stagnation in storage tanks and water towers, biofilm and sediment accumulation within pipes, aging infrastructure, deteriorating iron and copper pipes, low-flow conditions, free-living amoebae within biofilms that protect Legionella from disinfectants and corrosion products that consume disinfectants. He acknowledged that EPA regulates Legionella through existing drinking water regulations but argued that those standards establish only a minimum baseline. He noted that Pennsylvania has already expanded upon federal requirements by applying disinfectant residual standards more broadly than required under federal law. He further stated that House Bill 2085 is modeled after New Jersey’s approach, which strengthened disinfectant residual requirements following documented increases in Legionnaires’ disease cases. He explained that House Bill 2085 would require higher disinfectant residuals throughout chlorine-disinfected systems while also strengthening water distribution system management practices. Hvozdoch outlined several best management practices that utilities could implement, including mapping disinfectant residuals throughout distribution systems, evaluating infrastructure to identify aging pipes and dead ends, cleaning water mains and installing protective liners to reduce biofilm formation, maintaining regular flushing schedules and cleaning water storage tanks and towers every three to five years or whenever inspections indicate potential contamination. He stated that House Bill 2085 provides Pennsylvania with practical tools to reduce Legionnaires’ disease through proactive water system management rather than relying primarily on responses after outbreaks occur. He urged the committee and General Assembly to advance the legislation as a means of strengthening drinking water standards and reducing future cases of Legionnaires’ disease.

Rep. Smith-Wade-El asked whether there is any available data from New Jersey or other states that have implemented similar regulations to House Bill 2085, particularly since New Jersey's law served as a model for the legislation. He asked what is currently known about how comparable regulations have performed in practice. McQuade responded that Illinois has already implemented a 0.5 milligrams per liter chlorine residual requirement and has been able to operate under that standard. He explained that American Water operates systems in Illinois and has demonstrated that utilities can meet the higher residual requirement. He stated that New Jersey's legislation is still relatively new and remains in the implementation phase, meaning there is not yet enough data available to evaluate its effectiveness. He added that New Jersey is continuing to move forward with implementation. Hvozdoch agreed that New Jersey's legislation is too recent to provide meaningful data on outcomes. He suggested that Pennsylvania should engage with New Jersey officials to better understand the implementation process, including identifying successful elements and any challenges that have emerged. He noted that Pennsylvania has previously examined environmental policies adopted by New Jersey to evaluate potential lessons for state legislation. McQuade added that Lisa Daniels, the former Pennsylvania Safe Drinking Water Administrator who recently retired, had advocated as early as 2016 for a 0.5 milligrams-per-liter chlorine residual requirement. He noted that Daniels also chaired the EPA's Microbial Disinfection Byproducts Working Group, which later recommended a similar residual level. He stated that adopting such a standard earlier could have resulted in greater impacts on Legionnaires' disease prevention efforts in Pennsylvania.

Rep. Borowski asked about the potential impact of increasing chlorine residual requirements from the current standard to 0.5 milligrams per liter. She referenced Illinois, which has already adopted a similar standard, and stated that she had not noticed an increased chlorine taste or odor while visiting the state. She asked whether Pennsylvania residents would notice a difference in their water if the higher standard were adopted. McQuade responded that, in his opinion, most consumers would not notice a difference at the 0.5 milligrams per liter level, although he acknowledged that taste preferences vary. He contrasted the proposed standard with chlorine burns, which utilities may conduct periodically and which can reach levels of up to four milligrams per liter, resulting in noticeable changes in taste and odor. He stated that utility water quality reports demonstrate that systems are already capable of reaching 0.5 milligrams per liter on a regular basis. He addressed concerns regarding lead and copper leaching, stating that chlorine itself is not the primary cause of those issues. He explained that ammonia associated with nitrification processes can contribute to lead and copper leaching when bacteria interact with chlorine, rather than increased chlorine levels alone causing the problem.

Rep. Borowski asked whether increasing chlorine residuals would need to occur alongside infrastructure improvements and whether increasing chlorine levels alone would be sufficient to address Legionella risks. McQuade responded that maintaining higher disinfectant residuals helps ensure that chlorine remains present throughout the distribution system and reaches buildings, particularly in longer water lines and low-flow areas. He stated that building-level risks would still need to be addressed through water management plans based on ASHRAE Standard 188 and Guideline 12. He argued that aging infrastructure, dead-end water lines and areas with reduced flow demonstrate that Legionella prevention requires attention to both public water systems and building plumbing systems. He stated that the issue should not be viewed as a building-only problem but rather as a water system and building management issue requiring coordinated solutions. Hvozdoch stated that chlorine levels alone are not a single solution to Legionnaires' disease prevention. He explained that there is no "silver bullet" approach and that prevention requires addressing multiple points where Legionella can develop and spread, from water systems to building plumbing. He added that House Bill 2085 attempts to address multiple pathways of risk rather than focusing on one specific intervention. He noted that requirements related to maintaining disinfectant residuals throughout active portions of water systems are important components of a broader prevention strategy. McQuade added that a comprehensive approach is necessary because Legionella risk cannot be attributed to one single source. He compared the approach to strategies used during the COVID-19 pandemic, explaining that when the exact source of risk cannot always be identified, reducing risk across multiple possible pathways is an effective public health strategy. He stated that House Bill 2085 follows this approach by addressing risks from the water source through distribution systems and into building environments.

Rep. Smith Wade-El asked when the EPA report referenced during testimony was published. McQuade responded that he believes the report was published in November 2023 but that he was not completely certain of the date.

Rep. Smith-Wade-El thanked all individuals who provided testimony, either in person or through written submissions. He noted that the extensive testimony reflected the complexity of Legionnaires' disease prevention and stated that this was one of the most comprehensive hearing packets he had reviewed during his time in the Legislature. He explained that his interest in Legionnaires' disease legislation was influenced by previous cases identified at Lancaster County Prison and concerns about protecting vulnerable populations in institutional settings. He specifically raised concerns about incarcerated individuals and the difficulty of determining where individuals may have contracted Legionnaires' disease when they move between correctional facilities. He emphasized the importance of developing legislation that effectively protects vulnerable populations while ensuring that prevention strategies are based on evidence and practical solutions. He stated that he plans to continue reviewing testimony, consulting with stakeholders and working toward refining the legislation during the current session and potentially future sessions. He expressed interest in understanding why Pennsylvania has approximately twice the national average rate of Legionnaires' disease cases and identifying effective approaches to reduce those numbers.

Chair Danilo Burgos (D-Philadelphia) thanked the testifiers, committee members, legislative staff and City of Philadelphia personnel for their participation in the hearing.

Additional Testimony was provided by:

- Rebeca Medvedev, resident, Lancaster County,
- Jules Zacher, Esq., Kopsi Foundation for the Elimination of Legionnaires' Disease Inc.,
- Dr. Paul Edelstein,
- Matthew Corson, senior principal, Environmental Policy and Planning, Pennsylvania American Water, and
- Susan Emswiler, patient, resident, Lancaster County.